

REMARKS

In response to the outstanding Office Action, claims 16-24 have been canceled and certain other claims amended to better define the invention.

In the outstanding Office Action, claims 1-24 were rejected under 35 U.S.C. 112 first paragraph. In the Office Action, the Examiner states that the phase component separator has not been adequately described. It is respectfully submitted, however, that the phasing component generator is described with respect to Figure 7 from Section [0026] to Section [0031] of the application. Specifically, the description of Figure 7 is a summary of the phasing component generator.

Also, claims 6-8 and 11-19 were rejected under 35 U.S.C. 112 second paragraph, the Examiner stating that many of the variables used are not defined in the claims. In that regard, various claims have been amended to better define the variables, and accordingly, it is believed that this basis for rejection has been overcome.

Also in the Office Action, claims 20 and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cox. These claims have now been canceled.

Claim 1 was rejected under 35 U. S. C. 103(a) as being unpatentable over Hornak et al. Claim 1 as amended emphasizes

that the method includes generating a pre-calculated look-up table before transmission of the data. The look-up table is based on a generalized elliptic curve that is determined by the reference vectors during the calibration process. Each reference vector accounts for total gain and phase shift of a corresponding amplification branch. The reference vectors can be different from unit to unit. The phasing component generator in Fig. 1 is based on a pre-calculated look-up table generated by blocks of Fig. 7 from the transmission and reception of the calibration signals.

Hornak's patent is dealing with a real-time feedback loop approach that is used in many distortion correction mechanisms. Hornak's approach converts the detected distortion into a seemingly linear adjustment for correcting the distortion in real time. One of the issues that may limit the performance of this approach is the response time of the feedback loop. The amount of correction needed may be rapidly changing as the transmitted signal's amplitude and phase change. Therefore, one has to make tradeoffs between the residual error and the convergence speed. Moreover, the simple error signals (such as the envelop difference and the phase difference) between the desired signal and the feedback signal may not be good control signals for nonlinear distortions, although one may hope to derive the appropriate adjustment from the simple error signals. As such, it is difficult to remove the nonlinear distortion with the

seemingly linear adjustment that may sometimes lead to divergence for certain nonlinear distortions. If a high order or non-linear adjustment mechanism is used, then the performance is largely limited by either the processing power if implemented by DSP, or hardware complexity if implemented by circuits.

By contrast, the present invention pre-calculated loop-up table approach enables perfect correction without delay because there is plenty of time before transmission to find the corrections needed for all possible points in a complex signal constellation plane. The inventor has discovered that the amount of correction is exactly characterized by a generalized elliptic curve that may be different for each transmission unit. Given a transmission unit, the present invention allows one to know the exact adjustment needed for any desired transmission signal beforehand without worrying about convergence speed and residual error during transmission.

For the foregoing reasons, the application is now believed to be in condition for allowance, and accordingly, allowance at an early date is respectfully requested.

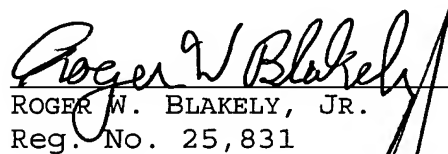
CONCLUSION

In view of the amendments and remarks made above, it is respectfully submitted that pending claims 1 through 15 are in condition for allowance, and such action is respectfully solicited.

Respectfully submitted,

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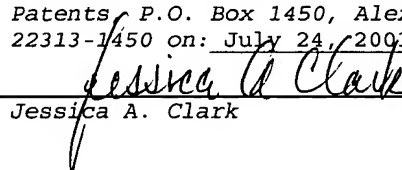


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Date